

North Dakota Information Technology Functional Consolidation Project

Final **Recommendations Report**

Presented by: Project Executive Committee and Project Steering Committee

Version 3.0

September 15, 2003

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Document Version Control

The Governor approved the preliminary version of this report on August 7, 2003. Version 1.0 of the report was then issued on August 11, 2003, and Version 2.0 on August 21, 2003. All modifications (other than typos, minor wording changes) to this report since the release of Version 1.0 have been explained below.

Date	Author	Change	Section, Page #
9/12/03	Nancy Walz	The Overall Cost Benefit Analysis has changed to reflect the new exemption of WSI.	Overall Cost Benefit Analysis: PAGE 14
9/12/03	Nancy Walz	Tables 1 and 2 have been modified since the release of Version 2.0, including changes to WSI, Arts, Health, G&F, JSND, Ind. Comm., Securities, Commerce and Historical.	Executive Summary, Agency Consolidation Decision Matrix: PAGE 9
9/11/03	Jennifer Kunz	Modified content to reflect the release of this final version of the report, including the subsection entitled the “process for changes to the recommendations.”	Purpose of this Document, Final Recommendations Report: PAGE 5
9/11/03	Jennifer Kunz	The rebuttal process by WSI resulted in a reduction of the number of WSI FTE's to transfer, from 1.5 to 1.0, changing the total FTE's to be transferred to 8.5	Executive Summary, Legislative Requirements, Objective: FTE Reductions, Recommendation: PAGE 7 Executive Summary, Agency Consolidation Decision Matrix: PAGE 9 Executive Summary, Exemptions: PAGE 11
9/11/03	Jennifer Kunz	Updated the schedule	Overview of the Implementation Project Plan: PAGE 18
8/20/03	Jennifer Kunz	Added Document Version Control section.	Document Version Control
8/20/03	Jennifer Kunz	Modified content to reflect the recommendations added for agencies impacted only by Section 16. Added subsections: Process for Recommendations, Agencies Impacted	Purpose of this Document, Final Recommendations Report
8/20/03	Jennifer Kunz	Added a list of the agencies impacted only by Section 16.	Purpose of this Document, Final Recommendations Report, Agencies Impacted
8/20/03	Jennifer Kunz	Modified a statement in the first paragraph to state, “based on preliminary information, ITD estimates that nine FTEs will be required...”	Executive Summary, Legislative Requirements, Objective: FTE Reductions, Recommendation
8/20/03	Jennifer Kunz	Separated this into two subsections: “For the 15 agencies impacted by Section 10,” and “For the remaining 31 agencies” and modified the first paragraph in the latter subsection to include more detailed recommendations.	Executive Summary, Legislative Requirements, Objective: Consolidated Services, Recommendation

Date	Author	Change	Section, Page #
8/20/03	Jennifer Kunz	Added Table 2 – Remaining Agencies Impacted	Executive Summary, Agency Consolidation Decision Matrix
8/20/03	Jennifer Kunz	Divided the Exemptions Section into 2 subsections: “For the 15 Agencies of Section 10,” and “For the Remaining 31 Agencies Impacted.” And added detail to the exemptions for the latter.	Executive Summary, Exemptions
8/20/03	Jennifer Kunz	Modified Goal 6 by removing ‘Support Plan.’ That deliverable will be managed external to this project within ITD. Modified the schedule dates to reflect the delay in publishing Version 2.0 of the final report, and formatted it to be clear.	Overview of the Implementation Project Plan

Purpose of this Document

The IT Functional Consolidation Project was created to meet the legislative intent of Sections 10, 11, and 16 of North Dakota House Bill 1505, of the 58th Legislative Assembly. The legislation required the consolidation of the following services:

- Email
- File and print server administration
- Database administration
- Storage
- Application server
- Hosting services

The legislation identified 24 FTEs to be transferred from agencies to ITD for potential reduction and identified a cost saving target of \$1,400,000.

In order to meet the requirements of the legislation, several project teams were assembled as outlined in Appendix III to develop a project plan, analyze the technical, financial, and human resource issues, and develop recommendations for implementing functional consolidation. This report documents the recommendations of the Project Executive Committee.

Final Recommendations Report

The Final Recommendations Report, Version 3.0, will be the last publication of this report. All future modifications will be documented by OMB and ITD in Tables 1 and 2, and in a Post Project Review Report. The Post Project Review Report will be prepared in 2004 to capture actual expenditures and projected savings.

Version 1.0 of the report was issued on August 11, 2003 and focused on the 15 agencies identified in Section 10 of House Bill 1505. Version 2.0 of this report included the prior recommendations of Version 1.0, and all recommendations for the services to be consolidated under Section 16.

Process for the Development of the Recommendations

The recommendations were established from meetings with agencies and data gathering. For the 15 agencies listed in Section 10, a draft version of the report was sent to them on July 18, 2003, and during the week of July 21 to July 25, 2003, agencies had an opportunity to ask questions and provide additional information after viewing the preliminary document. The final report, Version 1.0, was issued on August 11, 2003 after approval from the Governor.

A similar process was followed for the remaining agencies impacted by Section 16: the report was issued on August 21, 2003, and the agencies had an opportunity to ask questions and comment from August 21 to August 28, 2003.

The early release of these recommendations has allowed time for agencies to confirm the financial aspect of the report with ITD and OMB, and provide the necessary foundation to begin the planning, analysis, and hiring activities for the migration, prior to the transfer of FTEs on November 1, 2003.

Process for Changes to the Recommendations

While the recommendations are based on many hours of analysis, the problem is large and complex. All future financial modifications will be documented by OMB and ITD in Tables 1 and 2, and in a forthcoming Post Project Review Report, which will capture actual expenditures and projected savings.

In regards to the recommended transfer of FTE positions, the Project Executive Committee does not anticipate changes. However, if the consolidation/migration planning process reveals significant impacts on service delivery, the Project Executive Committee will address these issues after the initial consolidation/migration planning meetings have occurred.

Agencies Impacted

The agencies below are impacted by Section 16, but are also specified in Section 10 to transfer FTE's:

1. Office of Management And Budget
2. Tax Department
3. Department of Public Instruction
4. State Department Of Health
5. Department of Human Services
6. Job Service North Dakota
7. Industrial Commission
8. Bank of North Dakota
9. Housing Finance Agency
10. Workers Compensation Bureau (Workforce Safety and Insurance)
11. Highway Patrol
12. Department of Corrections And Rehabilitation
13. Game And Fish Department
14. State Water Commission
15. Department of Transportation

The remaining agencies impacted include:

- | | |
|--|--|
| 1. Adjutant General | 17. Protection & Advocacy Project |
| 2. Aeronautics Commission | 18. Public Service Commission |
| 3. Children's Service Coordinating Committee | 19. School for the Blind |
| 4. Council on the Arts | 20. School for the Deaf |
| 5. Department of Agriculture | 21. Secretary of State's Office |
| 6. Department of Commerce | 22. Securities Commissioner's Office |
| 7. Dept. of Financial Institutions | 23. State Auditor's Office |
| 8. Dept. of Parks & Recreation | 24. State Board for Vocational Education |
| 9. Dept. of Veterans Affairs | 25. State Fair |
| 10. Emergency management | 26. State Historical Society |
| 11. Governor's Office | 27. State Land Department |
| 12. Indian Affairs commission | 28. State Library |
| 13. Insurance Commissioner's Office | 29. State Seed Department |
| 14. Labor Commissioner's Office | 30. State Treasurer's Office |
| 15. ND Mill and Elevator Association | 31. Veterans Home |
| 16. Office of Administrative Hearings | |

Executive Summary

Legislative Requirements

Objective: FTE Reductions

HB 1505, Section 10 requires that 24 full-time equivalent (FTE) positions relating to information technology services be reduced and transferred from 15 agencies to the Information Technology Department (ITD), unless exempted by the Chief Information Officer, Curtis Wolfe.

Recommendation:

The Project Executive Committee recommends that eight and one half FTEs (seven full time positions and half of three additional positions) should be transferred to ITD on November 1 as required by the legislation. ITD has not finalized its staffing plan as of this report. ITD estimates that nine FTEs will be required to perform the services using the current delivery model and service levels.

For the 15.5 FTEs exempted, the analysis showed the following:

- 11 total FTEs are performing mostly duties that were not related to consolidation
- Two FTEs are required for the support of the Unisys mainframe in Job Service; Job Service plans to migrate to newer technology within five years and will implement the related staffing changes at that point.
- One FTE at the Bank of North Dakota, 0.5 FTE at the State Water Commission, 0.5 FTE at Workforce Safety and Insurance, and 0.5 FTE at the Department of Corrections and Rehabilitation were exempted from consolidation because of unique agency requirements.

In analyzing the FTEs to be transferred, the project team requested information on positions from the agencies and benchmarked that against META Group research indicating that an average of 15 to 18 servers are typically supported by one administrator. A total of the percentages of FTEs related to consolidated services was calculated for the agency and the result was rounded to the nearest half FTE to determine the number to be transferred.

Objective: Cost Savings

HB 1505, Section 11 requires the Office of Management and Budget (OMB) to achieve efficiencies during the 2003-05 biennium, relating to the required consolidation of information technology functions. OMB and ITD are to achieve accumulated net savings totaling \$1,400,000, but may exercise full discretion incorporating necessary modifications.

Recommendation:

For the 15 agencies identified, preliminary analysis indicates that close to \$1,000,000 may be saved in the 03-05 biennium if agency equipment can be fully reused. In 05-07, as equipment replacement cycles are implemented, savings of over \$500,000 are expected.

For the 31 agencies impacted only by Section 16, an additional \$150,000 may be saved in the 03-05 biennium if agency equipment can be fully reused. In the 05-07 biennium, savings of \$103,000 are projected.

Savings estimates are based on 24 months; the actual savings in 03-05 will depend on individual agency migration plans. Because the savings include federal and special funds designated for specific programs, the amount of savings available to the state general fund will be substantially less.

ITD and OMB have been working to develop cost-effective rates for the consolidated services based on the increased volume. The proposed rates are included as Appendix I.

Achieving cost savings of \$1,400,000 by FTE reductions would require 14 positions with average salaries of \$50,000 per year to be eliminated beginning July 1, 2003. As noted above, the Project Executive Committee does not recommend FTE reductions of this magnitude. However, the reduction in hardware and software costs due to the consolidation of servers will be substantial. Because of the diversity of agency infrastructure, there will be costs associated with transitioning to a standard environment. Over the long term, the Project Executive Committee expects that additional savings from efficiencies will be realized.

Objective: Consolidated Services

HB 1505, Section 16 requires that each state agency and institution, excluding the legislative and judicial branches, the institutions under the control of the state board of higher education, the Public Employees Retirement System (PERS), the Retirement and Investment Office (RIO), the Attorney General's Office, and any entity exempted by OMB and ITD, shall obtain email, file and print server administration, database administration, storage, application server, and hosting services through a delivery system established by ITD and OMB.

Recommendation:

For the 15 agencies specified in Section 10 of HB 1505

The Project Executive Committee recommends exempting the Bank of North Dakota, Housing Finance Agency, and the State Water Commission because of unique circumstances in those agencies. Eighteen servers will remain in those agencies. These exemptions should be reviewed on an annual basis. The Project Executive Committee recommends that all services for the other 12 agencies (152 servers) be consolidated with the exception of 29 servers in five agencies.

Of the 152 servers being migrated for the 15 agencies identified in Section 10 of HB 1505, ITD plans to eliminate approximately 68 servers in the 03-05 biennium. Of the remaining servers, approximately 40 will be administered by ITD but remain at agency locations because of unique requirements. Additional architectural streamlining could potentially eliminate other servers in the 05-07 biennium.

For the remaining 31 agencies where FTEs are not considered

The Project Executive Committee recommends exempting the State Fair and State Mill and Elevator. For the other 29 agencies, the technical and financial project leads are recommending that the School for the Blind, School for the Deaf, the Seed Department, and the Adjutant General not be consolidated. For more explanation of these exemptions, see the Exemptions section on page 8.

Approximately 24 servers will be consolidated. ITD anticipates that 23 of these servers will be eliminated. Assuming the agency staff time dedicated to maintaining these servers could be eliminated, approximately 1.6 FTE or \$80,000 per year could be reallocated to other functions on a statewide basis.

Agency Consolidation Decision Matrix

Two tables comprise this section. Table 1, the '15 Agencies of Section 10,' summarizes for the 15 agencies listed in Section 10, the services to be consolidated per Section 16 and the FTEs to be transferred. Table 2, the 'Remaining Agencies Impacted,' summarizes the services to be consolidated for the remaining agencies impacted by Section 16.

Table 1: 15 Agencies of Section 10

Agency	Email	F&P	DBA	App Serv	Storage	Hosting	Web	FTE Leg. Target	FTE currently used	FTE recomb. Transferred	# of agency servers current	# of agency servers migrated to ITD	# of servers remaining under agency	03-05 current budget	03-05 projected cost	03-05 projected savings (cost)	05-07+ Projected Agency Cost Ongoing	05-07 Projected Savings
110 OMB	P	P	P	C*	N	P		1	0.00		5	2	3	\$6,240	\$3,840	\$2,400	\$6,240	\$0
127 TAX	P	C	N	C	N	P		1	0.10		2	2	0	\$17,396	\$15,396	\$2,000	\$20,736	(\$3,340)
201 DPI	C	C	C	C*	N	C		1	0.60	0.50	10	9	1	\$75,114	\$25,380	\$49,734	\$36,552	\$38,562
301 Health	P	C	N	C*	N	C		1	0.50	0.50	13	7	6	\$80,914	\$52,680	\$28,234	\$79,656	\$1,258
325 DHS	P	C	C	C	C	C		5	3.85	4.00	56	56	0	\$1,065,825	\$597,144	\$468,681	\$808,920	\$256,905
380 JSND	P	C	C*	C*	C	C		3	0.85	1.00	14	13	1	\$366,258	\$172,884	\$193,374	\$249,000	\$117,258
405 Ind. Comm.	C	C	C	C	N	C		1	0.15		6	6	0	\$13,048	\$49,692	(\$36,644)	\$71,664	(\$58,616)
471 BND	P	X	X	X	N	X		1	0.85		13	0	13	\$357,116	\$357,116	\$0	\$357,116	\$0
473 HFA	X	X	X	X	N	X		1	0.25		3	0	3	\$32,664	\$32,664	\$0	\$32,664	\$0
485 WSI	C	C	C	C	C	C		2	0.50	1.00	19	2	17	\$95,577	\$30,432	\$65,145	\$40,656	\$54,921
504 HP	P	C	P	C*	N	C		1	0.20		3	2	1	\$22,795	\$8,604	\$14,191	\$13,704	\$9,091
530 DOCR	P	C	C	C	N	C		2	0.50		13	13	0	\$46,821	\$48,624	(\$1,803)	\$69,552	(\$22,731)
720 G&F	P	C	P	P	N	C		1	0.23		7	7	0	\$62,176	\$40,080	\$22,096	\$59,640	\$2,536
770 SWC	C	X	X	X	X	X		1	0.50		5	0	5	\$55,045	\$55,045	\$0	\$55,045	\$0
801 DOT	P	C	C	C	N	C		2	1.65	1.50	33	33	0	\$388,956	\$206,664	\$182,292	\$270,720	\$118,236
Total								24	10.73	8.50	202	152	50	\$2,685,945	\$1,696,245	\$989,700	\$2,171,865	\$514,080

C=Consolidate

C*=Partially Consolidate

P=Previously Consolidated

N=Not Applicable

X=Not Consolidated

Notes applicable to Table 1 and 2:

- **03-05 current budget** is an *estimate* of agency planned spending. Agency budgets are not typically tracked at this level of detail. Because some agencies budgeted for server replacements in 03-05 and others did not, the number does not necessarily reflect average expenditures over time.
- **03-05 projected costs** do not include equipment replacement costs based on the assumption that most equipment will be reused. **05-07 projected agency costs** include equipment replacement costs on an ongoing basis. These projections are for purposes of the analysis only. Individual agency costs will vary.
- **Projected savings** include general, federal and special funds.

Table 2: Remaining Agencies Impacted

Agency	Email	F&P	DBA	App Serv	Storage	Web Hosting	# of agency servers current	# of agency servers migrated to ITD	# of servers remaining under agency	03-05 current budget	03-05 projected cost	03-05 projected savings (cost)	05-07+ Projected Agency Cost Ongoing	05-07 Projected Savings
101 Gov	P	P	N	N	N	P	0	0	0	\$2,040	\$1,320	\$720	\$2,040	\$0
108 Sec State	P	P	N	N	N	P	0	0	0	\$6,240	\$1,464	\$4,776	\$2,256	\$3,984
117 Auditors	P	C	N	N	N	P	2	2	0	\$8,644	\$2,688	\$5,956	\$4,392	\$4,252
120 Treas	P	N	N	N	N	P	0	0	0	\$0	\$0	\$0	\$0	\$0
140 OAH	P	C	N	C	N	P	1	1	0	\$3,052	\$1,560	\$1,492	\$2,184	\$868
226 Land	P	C	N	C	N	C	2	2	0	\$45,839	\$10,884	\$34,955	\$13,176	\$32,663
250 Library	P	C	N	C	N	C	2	2	0	\$13,312	\$2,556	\$10,756	\$4,008	\$9,304
252 Deaf	X	X	N	N	N	X	1	0	1	\$23,875	\$23,875	\$0	\$23,875	\$0
253 Vision	P	X	N	N	N	X	2	0	2	\$11,088	\$11,088	\$0	\$11,088	\$0
270 Voc Ed	P	P	N	N	N	P	0	0	0	\$6,240	\$1,872	\$4,368	\$2,928	\$3,312
313 Vets Home	C	C	N	C	N	C	1	1	0	\$16,350	\$8,244	\$8,106	\$16,296	\$54
316 Indian Affairs	P	N	N	N	N	P	0	0	0	\$0	\$0	\$0	\$0	\$0
321 Vets Affairs	P	N	N	N	N	P	0	0	0	\$0	\$0	\$0	\$0	\$0
324 CSCC	P	N	N	N	N	N	0	0	0	\$24	\$24	\$0	\$24	\$0
360 P&A	P	C	N	N	N	C	1	1	0	\$8,211	\$1,524	\$6,687	\$2,472	\$5,739
401 Insurance	P	C	N	N	N	P	2	2	0	\$15,505	\$7,692	\$7,813	\$11,424	\$4,081
406 Labor	P	C	N	X	N	P	2	1	1	\$1,680	\$492	\$1,188	\$744	\$936
408 PSC	C	C	N	C	C	C	5	5	0	\$57,357	\$39,864	\$17,493	\$57,348	\$9
412 Aeronautics	P	C	N	N	N	P	1	1	0	\$950	\$528	\$422	\$912	\$38
413 DFI	P	P	N	N	N	P	0	0	0	\$6,240	\$1,680	\$4,560	\$2,760	\$3,480
414 Securities	P	P	N	N	N	P	0	0	0	\$6,240	\$624	\$5,616	\$1,056	\$5,184
512 DEM	P	C	N	C	N	P	1	1	0	\$2,600	\$2,880	(\$280)	\$4,560	(\$1,960)
540 Adj Gen	X	X	N	X	N	X				\$16,100	\$16,100	\$0	\$16,100	\$0
601 Commerce	P	C	N	C*	N	C	3	2	1	\$12,709	\$7,236	\$5,473	\$10,704	\$2,005
602 Ag Dept	P	C	N	C	N	C	1	1	0	\$25,745	\$2,556	\$23,189	\$4,104	\$21,641
616 Seed	X	X	N	X	N	P	3	0	3	\$9,250	\$9,250	\$0	\$9,250	\$0
701 Historical	P	C	N	N	N	P	1	1	0	\$10,990	\$2,880	\$8,110	\$4,560	\$6,430
709 Arts	P	N	N	N	N	P	0	0	0	\$1,000	\$1,000	\$0	\$1,000	\$0
750 Parks	P	C	N	N	N	P	1	1	0	\$9,242	\$2,760	\$6,482	\$4,320	\$4,922
Total							32	24	8	\$312,243	\$159,857	\$152,386	\$209,285	\$102,958

C=Consolidate

C*=Partially Consolidate

P=Previously Consolidated

N=Not Applicable

X=Not Consolidated

Exemptions

The following information further explains the exemptions recommended by the Project Executive Committee for the 15 Agencies of Section 10, and for the remaining 31 agencies impacted. In general, agencies that are not closely connected with government services, do not share other services, do not receive general funds and are not located in Bismarck were considered for exemption from the initial consolidation effort. Although exempted now, OMB and ITD should annually review with each agency opportunities for consolidation when efficiencies can be possible.

Exemptions for the 15 Agencies of Section 10

Specialized Servers

For 12 of the 15 agencies specified in Section 10 of HB 1505, the Project Executive Committee recommends that all services (approximately 170 servers) be consolidated with the exception of 12 servers in four agencies. The servers not consolidated include the legacy mainframe environment at Job Service, the servers supporting the desktop environment at DPI, and specialized servers at Highway Patrol, the State Radio Division of OMB and the lab at the Health Department. These servers should be reviewed and considered for future consolidation when appropriate.

FTEs Performing Other Services

For 12 of the 15 agencies specified in Section 10 of HB 1505, the analysis showed that the 11.0 FTE listed below related to time spent providing services that were not consolidated.

Agency	FTE exempted	Agency	FTE exempted
OMB	1.0	HFA	1.0
TAX	1.0	WSI	0.5
DPI	0.5	HP	1.0
Health	0.5	DOCR	1.5
DHS	1.0	G&F	1.0
Ind. Comm.	1.0	SWC	0.5
		DOT	0.5

In addition, two FTE were exempted at JSND for work related to administering the Unisys mainframe that was not consolidated.

State Water Commission

The State Water Commission has evolved into an environment that is unique to state government. Because conversion costs would be significant, the Project Executive Committee recommends exempting the 4D and Apple environment from consolidation and the associated 0.5 FTE transfer until a migration plan can be developed. The State Water Commission has current projects involving the use of the shared e-mail and GIS services that will continue.

Department of Corrections and Rehabilitation

The Department of Corrections and Rehabilitation (DOCR) will not be exempted from consolidation. However, the Project Executive Committee determined that the transfer of 0.5 of an FTE related to consolidated services would present an undue hardship for the agency and should be exempted. End-user support services provided by the FTE are currently understaffed and additional restrictions on the FTE count would be detrimental. However, the Project Executive Committee felt that the consolidated services could provide benefit and potentially increase service levels for DOCR. The DOCR will be billed for services received up to the limit specified.

Bank of North Dakota

The Bank of North Dakota currently receives many services from ITD. Because the servers remaining at the Bank are integral to the banking business, the Project Executive Committee recommends exempting those servers and the associated 1.0 FTE from consolidation at this time. However, the committee recommends that the Bank begin migrating to local area networking standards and directory standards being adopted by ITD. Also, the Bank should continue to evaluate ITD services and migrate to the shared environment when appropriate.

Housing Finance Agency

The Housing Finance Agency has a small IT environment and based on the analysis should be exempted from the FTE transfer. In addition, the Project Executive Committee recommends exempting them from mandated consolidation of servers. Because they have unique business requirements not closely connected to state government (similar to the Bank and Mill and Elevator) the decision to use consolidated services will be left to the agency. The Project Executive Committee recommends that they continue to evaluate ITD services and migrate to the shared environment when appropriate.

Workforce Safety and Insurance

Workforce Safety and Insurance has an environment unique to their agency built around the IBM RS6000 platform. Because conversion costs would be significant and migration would be impractical at this time, the Project Executive Committee recommends that current specialized servers and an associated 0.5 FTE be exempted. File and print, e-mail and web servers will be migrated and 1 FTE transferred as part of the consolidation. The Project Executive Committee recommends that they continue to evaluate ITD services and migrate additional applications to the shared environment when appropriate.

Other Agencies

A number of agencies, particularly the large agencies like DOT, DHS and JSND, have applications that are closely linked to their business requirements. Today those agencies typically provide end-to-end support for the application. The service model will change with consolidation, with ITD providing the technical support while agencies continue to provide the application support. Therefore, it will be important to plan the migration carefully so that ITD can build the knowledge as well as the processes to provide adequate support and minimize the risk of disruptions.

While these applications will not be exempted from consolidation, ITD will need to work closely with the agencies to identify any unique requirements and build a transition plan to ensure a smooth migration. The recovery of investments made with federal or special purpose funds will be addressed in the migration plan and billing structure. The migration plan will be one component of the implementation plan to be finalized by September 2003.

Exemptions for the Remaining 31 Agencies Impacted

Of the 31 remaining agencies impacted, six will not be consolidated at this time. For the other agencies that will be consolidated, migration planning will begin in 2004.

Adjutant General

The Financial and Technical Project Leads are recommending that the Office of the Adjutant General not be consolidated based on their integration with the US Military Services infrastructure. This recommendation is subject to approval by the Project Executive Committee.

School for the Deaf

The Financial and Technical Project Leads are recommending that the School for the Deaf not be consolidated based on their remote location and their dependency on the K-12 education network. This recommendation is subject to approval by the Project Executive Committee, and should be reviewed on an annual basis for potential consolidation in the future.

Vision Services / School for the Blind

The Financial and Technical Project Leads are recommending that Vision Services / School for the Blind not be consolidated also based on their remote location and their dependency on the K-12 education network. This recommendation is subject to approval by the Project Executive Committee, and should be reviewed on an annual basis for potential consolidation in the future.

State Fair

The Project Executive Committee recommended earlier in this process that the State Fair not consolidate, based on the defined criteria that agencies that are not closely connected with government services, do not share other services, or do not receive general funds be exempted. This recommendation should be reviewed on an annual basis for potential consolidation in the future.

State Mill and Elevator

The Project Executive Committee recommended earlier in this process that the State Mill and Elevator not consolidate, based on the defined criteria that agencies that are not closely connected with government services, do not share other services, or do not receive general funds be exempted. This recommendation should be reviewed on an annual basis for potential consolidation in the future.

State Seed Department

The Financial and Technical Project Leads are recommending that the State Seed Department not be consolidated based on their remote location and their integration with the higher education network. This recommendation is subject to approval by the Project Executive Committee, and should be reviewed on an annual basis for potential consolidation in the future.

Overall Cost – Benefit Analysis

Benefits of Consolidation

House bill 1505 mandates the consolidation of a number of IT services with the goal of reducing the Total Cost of Ownership (TCO) of the State's IT infrastructure. There are two separate and independent components to this consolidation process: 1) placing the management of these IT services under a single organizational entity (ITD) and 2) leveraging this centralized management to create a common shared infrastructure wherever possible. The first component of this consolidation process could be obtained by simply transferring the management of the existing infrastructure to ITD. While this would be a consolidation of sorts, such an approach would not reduce costs.

The path towards cost reduction requires the creation of a common shared infrastructure to deliver services. For example, State government has over 100 servers providing file and print services, typically one or more per agency. Utilizing the state network and consolidating onto a single, clustered, environment for state government can potentially eliminate 100 or more application, database or file and print servers. This reduction in server count will decrease the state's cost in hardware, software and technical support. To realize this savings requires an upfront investment to move all the users from the existing environment to the standard environment. It also means that agency investments in servers and software licenses for their current infrastructure may be "lost" because they will not be used in the shared environment. Every effort will be made to reuse equipment where possible while at the same time reducing the ongoing costs through consolidation.

While the creation of a shared infrastructure can decrease cost, there are services that simply do not fit within a shared infrastructure model at this time. Some services require a complex environment consisting of multiple servers, while others require truly unique technology to satisfy a single agency's business needs. For services such as these lowering the server count is not possible and a different approach must be found to create efficiencies.

The efficient management of large numbers of servers running diverse applications depends on leveraging the synergies provided by larger teams of experts. Teams of system, storage and database administrators can provide services to multiple agencies. At present the lessons learned by one agency in managing their IT infrastructure are not available to other agencies which must inevitably lead to one agency struggling with a problem already solved by another. Time spent researching new technologies, training a second person to provide back-up support and developing disaster recovery plans are all areas where a larger group of specialists can provide efficiencies. At the same time, it is important to recognize that ITD also needs to provide staff that understands the unique business needs of the individual agencies and can communicate technical solutions to them.

Scope of Analysis

The actual analysis of individual agency costs for 03-05 related to consolidation (summarized Tables 1 and 2) included a review of actual budgets and projected expenditures under consolidation. These estimates will continue to be refined as detailed migration plans are developed. The overall cost-benefit analysis does not go to this level of detail, but instead focuses on a conservative estimate of savings related to the reduced number of servers and corresponding software.

Investment Costs

One-time investment costs were developed by calculating the out-of-pocket costs of moving to a consolidated infrastructure and developing the organizational support structure necessary for a consolidated environment. It is assumed that all migration tasks will be performed by reallocating existing staff.

Clustered servers	4 EA @ \$9,568	\$38,272
Managed storage	3 EA @ \$19,480	\$58,440
Client Access Licenses (CAL)	2000 @ \$24	<u>\$48,000</u>
Total		\$144,712

Ongoing Costs and Savings

ITD has developed rates and cost estimates for providing the consolidated services based on projected volumes. Actual ongoing costs to agencies will be determined by the number and type of services purchased. Total agency costs for the 03-05 biennium will depend on the implementation date for each agency.

The following analysis compares the cost of continuing with the decentralized infrastructure compared to the cost of the centralized infrastructure. The analysis includes costs for all agencies.

To simplify the analysis, projected ongoing costs were calculated using an average server cost of \$5,000. Actual server costs varied from \$2,000 to \$500,000 for a few high-end systems. Since the costs would cancel out in the comparison, a typical average server cost and four year life cycle was used. Because the number of users will not change, the ongoing costs for client access licenses will not change with the centralized approach and are not included in the analysis. Similarly, disk costs will not change significantly but will be managed differently, allowing agencies to purchase capacity as needed rather than as part of the server investment.

Projected ongoing costs for existing infrastructure			Annual cost
# of Servers	234	Server replacement cost @ \$5,000 EA every 4 years	\$292,500
# of Database Licenses	17	Database license cost	\$38,313
# of FTE (assumes 2 FTE for add'l 29 agencies + 10.73 for 15 agencies)	12.73	Personnel cost @ \$50,000 /FTE	\$636,500
Total			\$967,313
Projected ongoing costs for consolidated infrastructure			
# of Servers	143	Server replacement cost @ \$5,000 EA every 4 years	\$178,750
# of Database Licenses	3	Database license cost	\$28,414
# of FTE (assumes 9.0 FTE at ITD, 2.5 FTE in agencies)	11.50	Personnel cost @ \$50,000 /FTE	\$575,000
Total			\$782,164
Annual difference (savings) in operating costs			\$185,149
Return on investment of \$144,712			7.8 months

Additional Considerations

During the analysis phase, a number of considerations surfaced related to the consolidation either directly or indirectly. The project team, as well as ITD management and enterprise architecture teams, should review the following list of considerations to clarify and address any outstanding issues.

1. Service Definitions Need Clarification

The consolidated services were not defined in statute and while a general understanding of the services is understood, there is still confusion about how far the services go when interfacing with customers and end-users. Brief descriptions of the consolidated services have been developed and are provided in Appendix II. The agency personnel in positions being considered for FTE transfers typically have responsibilities that go beyond the narrow definitions of the consolidated services. They have direct contact with users in the agencies and work with them to develop technical solutions or provide end-to-end support. If the position is eliminated, ITD or someone else must provide these services. Services in question include the project management and consulting associated with selecting technologies and deploying new applications, user administration, and desktop support. Managing customer expectations will be important to the success of the project.

Clear definitions of the mandated consolidated services should be developed and communicated to the agencies. In addition, ITD should identify additional areas where they are able to provide optional services to meet the needs of agencies or where private vendors or partners are available.

2. Network Operating System Standard

For file and print consolidation to provide cost savings, a standard environment must be supported. ITD primarily supports Microsoft Windows as the local area network server environment of choice. ITD should request, through the enterprise architecture process, that Windows be adopted as a standard for local area network server operating systems. The use of Active Directory as a standard should also be reviewed and confirmed. ITD will outline the migration plan and costs as part of the implementation plan.

3. Further Consolidation of E-mail

Over the last few years, ITD has consolidated the majority of agencies onto two e-mail systems – Exchange and Lotus Notes. While two systems are considerably more efficient than the previous smorgasbord of products, further savings may be realized by moving to a single e-mail system. A recommendation for a single e-mail solution should be developed through the enterprise architecture process. A migration plan, implementation budget and proposed benefits will need to be developed by April 2004 to be considered for inclusion in the 2005-07 budget.

4. Further Database Consolidation

For true consolidation of the database environment, a more limited standard must be defined and migration plans must be developed to move off legacy or non-mainstream databases. A recommendation for reducing the number of database environments should be developed through the enterprise architecture process. The recommendation should include proposed benefits, a migration plan and implementation budgets. The proposal will need to be developed by April 2004 to be considered for inclusion in the 2005-07 budget.

5. Impact on Related Services

The personnel in agencies who support the server infrastructure also typically provide desktop support and work closely with other staff in the agency who provide desktop support. Several agencies have internal help desks. While consolidation of these services was not mandated, these services have been impacted by the consolidation and questions remain about the future direction of these services.

6. High Speed Network Requirements and Remote Support

To deliver file and print services and high bandwidth applications from a centralized environment, high-speed connections to the state network are essential. The Industrial Commission is not currently connected to the metro area network in Bismarck. Consolidation onto the centralized servers will not occur until the network connections are upgraded.

In addition, servers in locations outside of Bismarck will likely remain where they are. Some efficiency will be gained by coordinating support service for multiple agencies outside the Bismarck area. For agencies who are not located in the capitol building, access to support staff and access to network connectivity are important issues that must be addressed in the support plan.

7. Security and Confidentiality Concerns

A number of agencies have expressed concern that moving a server physically out of their agency will compromise the security and confidentiality of their electronic information. ITD is confident that they can meet or exceed the security and confidentiality requirements that agencies have. ITD may need to do a better job of communicating their procedures and processes for protecting security and confidentiality.

8. Transition Planning

There are a number of issues related to a change of this magnitude. One of the biggest concerns is that service levels will drop as key personnel within the agencies transition to new positions. Worse yet, skilled staff may leave state government employment because of the uncertainty surrounding their positions. Jobs will be re-designed as a result of the reorganization.

Also, technical staff in the agencies and ITD will be required to complete the tasks associated with the migration in addition to their normal duties. ITD will be tasked with migrating the server infrastructure. Agency desktop support staff will need to reconfigure all the end-user computers to point to the new servers. A great deal of coordination and cooperation will be needed for the migration to be successful.

To address these issues, project planning and communication will be extremely important. The detail migration plans for each agency will be developed as early as possible. Agencies will be asked to identify the unique skills, knowledge and abilities required to support their agency applications so that individuals hired by ITD will be able to provide the necessary support. ITD will need to work closely with the agencies during the transition to minimize disruptions. The implementation plan will serve as the overall planning document for the transition.

Overview of the Implementation Project Plan

The Implementation Project Plan defines the project scope and describes how the project goals will be met. A summary of the information in the plan is included below: The full document will be located on the consolidation web page at www.discovernd.com/itd/consolidation.

Project Goals

1. By July 18, 2003, deliver a preliminary recommendations report and implementation project plan to the 15 agencies listed in Section 10, based on findings from an impact assessment.

STATUS - this goal was met

2. By August 1, 2003, deliver a final recommendations report for the 15 agencies to the Project Executive Committee and the Governor.

STATUS – the final report was approved on August 7, 2003

3. By August 15, assess the impact of consolidating services on all remaining agencies (except those specifically exempted), and deliver to them the updated recommendations report.

STATUS – the updated report was delivered on August 21, 2003

4. By September 2, 2003, deliver the updated recommendations report and implementation project plan for the remaining agencies to the Project Executive Committee for approval.

STATUS – the report was delivered on September 12, 2003

5. In September 2003, complete a thorough cost/benefit analysis, which is included in the updated recommendations report and implementation project plan.
6. In September 2003, develop a detailed Systems and Services Migration Plan for the consolidation, which will be integrated into the implementation project plan.
7. Identify and transfer necessary FTE's no later than Nov. 1, 2003. This is subject to individual agency review and assessment.
8. By June 30, 2004, migrate all required agencies (according to the Systems and Services Migration Plan) to obtain consolidated services from ITD.
9. Deliver cost savings no later than June 30, 2005.

In addition to the goals, the implementation plan includes the following sections:

Project Scope

- This section of the plan is essentially an overview of the deliverables and activities to occur. Project activities will be performed in three phases, and organized by the following subprojects: project management/integration, communications, human resources, financial, and systems/services.

Project Schedule

- The schedule is a detailed list of activities with scheduled start/end dates and resource allocations. Some key activities to make note of at the time of this publication are as follows:

Aug. 18 - Sept. 15, 2003	ITD and agencies plan for service migration (ITD and OMB Aug. 18 - Sept. 15, 2003 ITD and agencies plan for service migration (ITD and OMB will initiate service migration planning meetings first with DHS, DOT, WSI, JSND, DoH, and DPI, and then with all remaining agencies)
Aug. 21 - Sept. 5, 2003	ALL positions are announced internal to state government (external advertisement only if no applicants meet minimum qualifications); applications are accepted
Sept. 2, 2003	Modifications to Final Recommendations Report complete
Sept. 2 – 11, 2003	Interviews for RIF'd employees (they receive automatic interview if they apply)
Sept. 12, 2003	Employment offers and rejection letters sent to RIF'd employees
Sept. 8 – 12, 2003	Screening of IT state government applicants
Sept. 15 – 19, 2003	Interviews with selected IT state government applicants
Sept. 22 – 26, 2003	Hiring decisions
Sept. 15, 2003 – June 30, 2004	Consolidation/migration of services (detailed schedule is under development), beginning with DHS; transitioning and training of newly hired personnel
Nov. 1, 2003	FTE positions (8) transfer to ITD

Project Organizational Chart and Roles/Responsibilities

- This section of the plan explains the overall governance structure of this project, and information about the team members and their responsibilities respective to the five subprojects: project management/integration, communications, human resources, financial, and systems/services. The Organizational Chart is also attached to this report in Appendix III.

Supplementary Management Plans Section

- The supplementary plans are explanations and processes for how the project's scope, schedule, communications, risks, and costs.

Appendix I – Proposed ITD Rates for Consolidated Services

Note – The rates below are draft rates and may be modified as we continue to refine the financial analysis at each agency

File and Print - Shared

- \$3.00 / user
- \$1.00 / GB (Tier 2)

File and Print – Dedicated Remote Basic

- \$350.00 / server
- \$2.00 / user
- A separate fee for disk may apply when large amounts of remote disk storage are required (Tier 1)

File and Print – Dedicated Remote High Capacity

- \$600.00 / server
- \$2.00 / user
- A separate fee for disk may apply when need large amounts of remote disk storage are required (Tier 1)

Web Hosting – Basic Web Sites (does not include e-government applications)

- \$20.00 / base web site
- \$20.00 / dynamic web site option
- \$TBD – Secure Socket Layer encryption option
- \$1.00 / GB (Tier 2)

Application Hosting – Server Component

- \$150.00 / application – for applications on shared server
- \$300.00 / application – for applications requiring a dedicated server
- \$1.00 / GB (Tier 2)

Application Hosting – Database Component (includes normal DBA maintenance)

- Tiered pricing based on complexity of the application
Most applications will fall between \$50.00 to \$1,000.00 per month
- \$10.00 / GB (Tier 3)

Database Administration / Application Support

- \$56.25 / hour

Email

- Included in ITD's current device rate

Note: all charges are monthly unless otherwise indicated

Appendix II – Definitions of Consolidated Services

Directory Services – The purchase, maintenance and technical support of servers and software for providing directory services, including the management of user accounts.

Impact of Consolidation: Agencies receive directory services (*i.e.* Network Logon) from either the State Government wide Active Directory (NDGOV) or the State Government wide NT 4 domain (NDSTATE) or an agency specific NT 4 domain or an agency specific Novell NDS domain. These user accounts are utilized to provide File & Print services to the agency's users. In no case is an agency using these directory services to provide user authentication/authorization for specific applications.

E-mail server administration – The purchase, maintenance and technical support of servers and software for providing groupware services such as e-mail, calendaring, and messaging.

Impact of Consolidation: E-mail is easily the most consolidated service at present with only 5 agencies not using ITD's E-mail service. Four of these five have Microsoft Exchange deployed, while the fifth uses an Apple based POP/IMAP server.

File and print server administration - The purchase, maintenance and technical support of servers and software for providing local area networks and related file and printer sharing services.

Note that file and print services include the ability to launch an application whose disk image is resident on the server, but whose code executes on the workstation. Typical examples of these would be Access or FoxPro applications.

Impact of Consolidation: The majority of the deployed F&P servers run Microsoft Windows and are either part of the State Government wide Active Directory (NDGOV), the State Government wide NT 4 domain (NDSTATE) or an agency specific NT 4 domain. While the use of Netware and NDS is in the minority, its deployment is significant

Application hosting – The purchase, maintenance and technical support of servers and software necessary to run agency specific applications. This does not include the direct support of the application itself, which is a separate service.

Impact of Consolidation: Web Application Services are applications delivered via Web Browser from either a Java Application Server (*i.e.* WebSphere) or a .NET server. All but one agency uses ITD to host its Web Application services. Workforce Safety currently hosts its own WebSphere environment, but is in the process of migrating that environment to ITD.

A number of agencies have applications that consist of multiple components deployed on multiple servers. In addition, there are a number of turnkey applications whose continued vendor support requires that they be on dedicated server platforms. Finally, there are applications that “do not play well with others” and will require a dedicated server platform. These specialized server environments must be considered independently of any other service infrastructure.

Web site hosting – The purchase, maintenance and technical support of servers and software necessary to host a web site.

Impact of Consolidation: Numerous agencies have deployed web servers for both internal and external (*i.e.* public) use. With one exception, these web servers are Microsoft IIS servers that provide both ASP and HTML services. DOCR has deployed Apache on Linux to provide intranet web services.

Database server administration – The purchase, maintenance and technical support of servers and software necessary to run a shared database such as Oracle or SQL Server.

Impact of Consolidation: The majority of agency deployed Database Servers are part of turnkey vendor supplied applications. Microsoft SQLServer is, by and large, the database of choice for such turnkey servers though applications that use Pervasive or B-Trieve are present. In addition, agencies have deployed general-purpose database servers (*i.e.* Database servers that host databases for a number of applications); in all cases but one SQLServer is the database that is deployed. The exception is Workforce Safety, which has deployed, and manages, its own Oracle installation.

Database administration – The design and performance tuning of shared databases such as Oracle or SQL Server. This does not include the direct support of an application that may utilize the database. That is a separate service.

Storage – The management of shared storage and related back up and recovery processes.

Impact of Consolidation: Numerous agencies have deployed backup solutions for their server infrastructure. These range from tape drives that backup a single server to tape libraries that back up numerous machines across the data network. In this latter case ArcServe is the backup program of choice.

Three agencies have deployed storage area network (SAN) environments that include both disk and tape.

Related services that may be impacted:

While the environments described above are required for the delivery of IT services they are not a complete description of all the elements that are required.

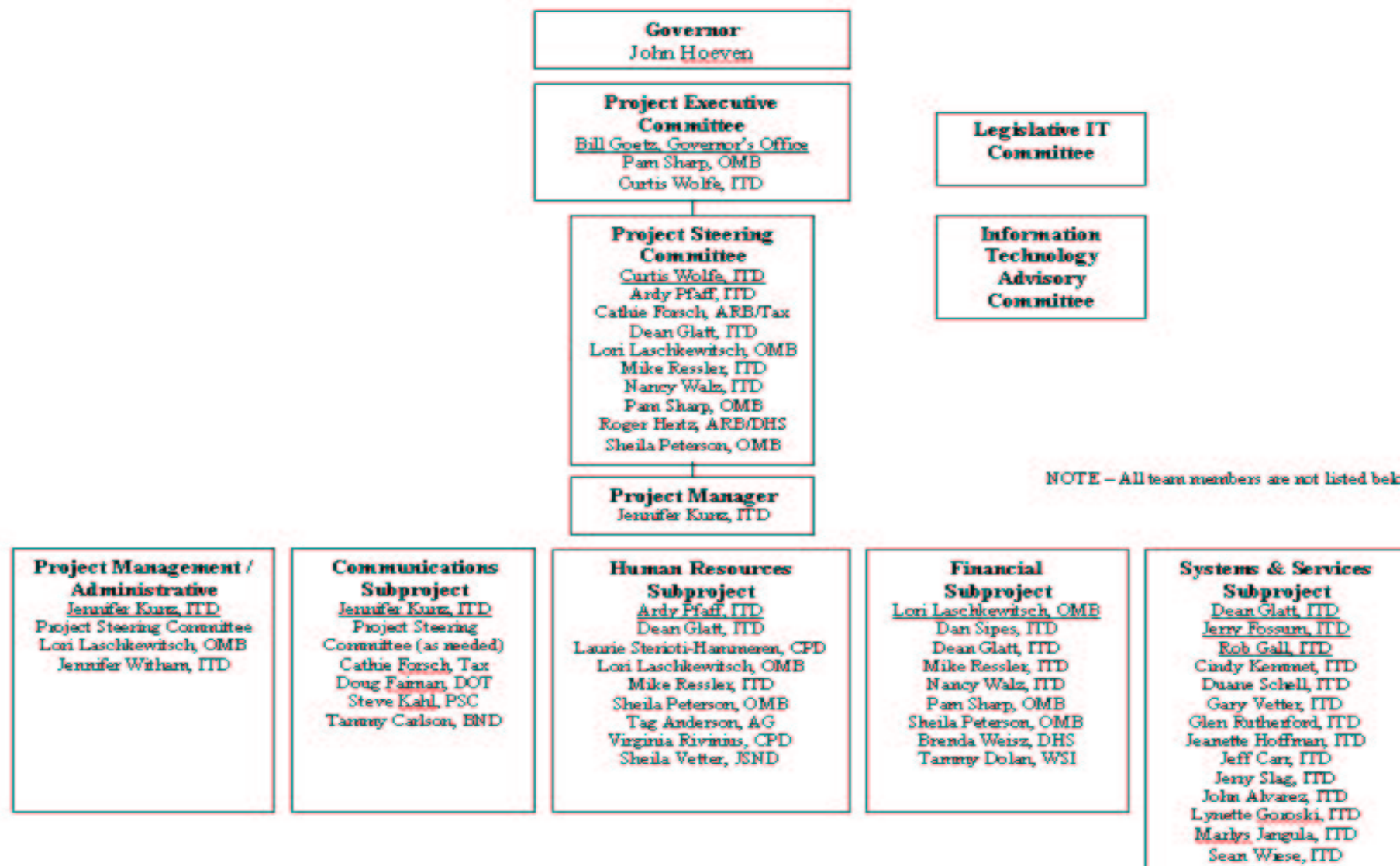
Users will require a desktop environment to access these IT services as well as application support to assist them in using the IT Services. These components are not included in the definitions above because these service components are not included in the consolidation mandated by HB 1505. The provision of these desktop services will remain the province of the agencies, as will functions such as ad hoc reporting.

User administration – Establishing and maintaining user IDs and permissions. Establishing file mappings. (Who needs access to what?)

Desktop Infrastructure Support – The purchase, installation and support of end-user workstation hardware, operating systems and installation of standard software. (Is it working?)

End User Support – The training and support related to the use of end-user application, either groupware or agency specific. (How do I...?)

Appendix III – Project Organization Chart



Recommendations Report Approval

I approve the Recommendations Report and commit to supporting the recommendations outlined in this document.

Bill Goetz, Chief of Staff, Office of the Governor

Date

Pam Sharp, Director, Office of Management and Budget

Date

Curtis Wolfe, CIO, Information Technology Department

Date